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KX-HTS Step by Step Guide SIP Trunk

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Panasonic System Networks
PBX SE team

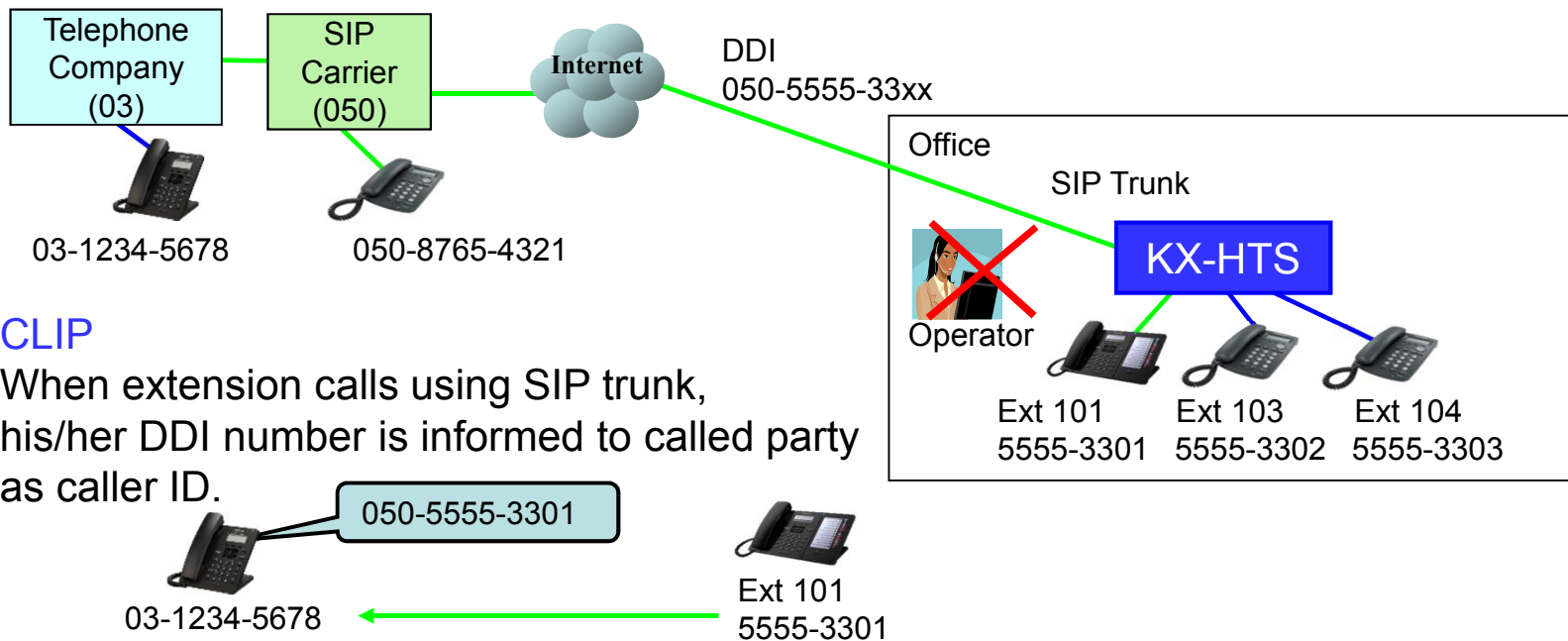
Specifications are subject to change without notice.

1. Overview

SIP trunk is useful in order to **save cost**.

KX-HTS supports **200 DDI** numbers for one or two SIP carriers.

Extension can be called directly by DDI **without operator**.



2. Table of Contents

Chapter	Contents
1	SIP trunk programming
2	Test after SIP trunk programming
3	ARS Programming

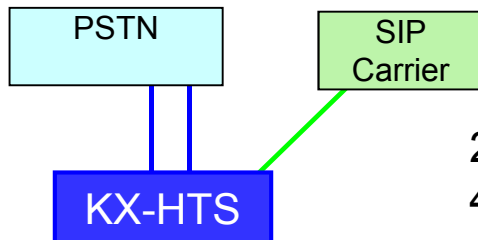
Chapter 1

SIP Trunk Programming

11. Click Port to change to SIP.

Click port 3 for example.

The screenshot shows the 'HTS Web Maintenance Console' interface. On the left is a 'PBX Configuration' sidebar with a tree view containing folders for '1.System', '2.Extension', and '3.Trunk', and sub-items for '1.Port', '2.DIL', '3.DDI', '4.Caller ID Modify & Block', '5.DISAS', '6.Analogue CO Property', and '7.SIP Trunk Property'. The main area is titled 'PBX Configuration' and displays three rows of extension and trunk buttons. The first row shows extensions 119-124 and 101-102, with 101 and 102 highlighted in cyan. The second row shows extensions 111-118, with 116 highlighted in cyan. The third row shows extensions 103-110. To the right of these rows are three 'Trunk' sections: 'Doorphone' (1, 2), 'Trunk' (5, 6, 7, 8), and a bottom 'Trunk' section (1, 2, 3, 4) where port 3 is highlighted with a red square.



2 lines of Analog CO and
4 ch of SIP for example.

12. Change the port to SIP.

The screenshot displays the HTS Web Maintenance Console interface. The top header shows 'HTS Web Maintenance Console' and the version '000.00285'. On the left, a 'PBX Configuration' sidebar lists several categories: 1.System, 2.Extension, 3.Trunk, 4.TRS/ARS, and a sub-menu for 3.Trunk containing 1.Port, 2.DIL, 3.DDI, 4.Caller ID Modify & Block, 5.DISAS, 6.Analogue CO Property, and 7.SIP Trunk Property. The main content area is titled 'Port' and shows the breadcrumb 'PBX Configuration > 3.Trunk > 1.Port'. It features a 'CO Line Number Attribution' field with the value '3' and a dropdown menu currently set to 'Analogue'. The dropdown menu is open, showing options: 'Analogue', 'SIP Carrier - 1' (highlighted in blue), 'SIP Carrier - 2', and 'No Connect'. Below this is a 'Trunk Group' field and a 'Basic' configuration section.

HTS Web Maintenance Console
000.00285

PBX Configuration

- 1.System
- 2.Extension
- 3.Trunk
 - 1.Port
 - 2.DIL
 - 3.DDI
 - 4.Caller ID Modify & Block
 - 5.DISAS
 - 6.Analogue CO Property
 - 7.SIP Trunk Property
- 4.TRS/ARS

Port
PBX Configuration > 3.Trunk > 1.Port

CO Line Number Attribution: 3

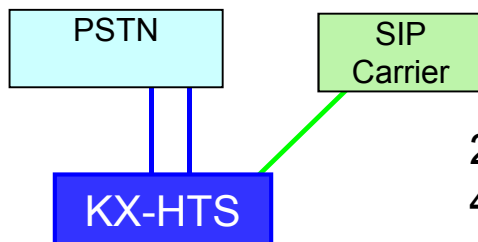
Trunk Group

Analogue - Basic

Analogue
Analogue
SIP Carrier - 1
SIP Carrier - 2
No Connect

13. Assign Trunk Group.

The screenshot shows the HTS Web Maintenance Console interface. The header includes 'HTS' and 'Web Maintenance Console' with the version '000.00285'. On the left is a 'PBX Configuration' sidebar with a tree view containing: 1. System, 2. Extension, 3. Trunk (expanded), 1. Port (selected), 2. DIL, 3. DDI, 4. Caller ID Modify & Block, 5. DISA, 6. Analogue CO Property, 7. SIP Trunk Property, and 4. TRS/ARS. The main content area is titled 'Port' and shows the breadcrumb 'PBX Configuration > 3. Trunk > 1. Port'. It contains the following fields: 'CO Line Number' set to 3, 'Attribution' set to 'SIP Carrier - 1', and 'Trunk Group' with a dropdown menu showing options 1, 1, 2 (highlighted), 3, and 4. Below these fields, the text 'Analogue - Basic' is visible.



2 lines of Analog CO for TRG1
4 ch of SIP for TRG2

14. Repeat to other trunk.

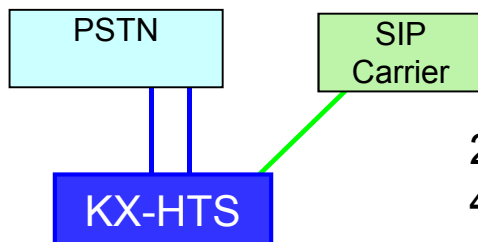
HTS Web Maintenance Console
000.00285

PBX Configuration

- 1. System
- 2. Extension
- 3. Trunk
 - 1. Port
 - 2. DIL
 - 3. DDI
 - 4. Caller ID Modify & Block
 - 5. DISA
 - 6. Analogue CO Property
 - 7. SIP Trunk Property

PBX Configuration

Extension	119	120	121	122	123	124	101	102	Doorphone	1	2		
	17	18	19	20	21	22	23	24					
Extension	111	112	113	114	115	116	117	118	Trunk	5	6	7	8
	9	10	11	12	13	14	15	16					
Extension	103	104	105	106	107	108	109	110	Trunk	1	2	3	4
	1	2	3	4	5	6	7	8					



2 lines of Analog CO and
4 ch of SIP for example.

15. Assign SIP account.

Ask your account to your SIP carrier.

The screenshot shows the HTS Web Maintenance Console interface. The page title is "SIP Trunk Property" and the breadcrumb is "PBX Configuration > 3.Trunk > 7.SIP Trunk Property". The left sidebar shows a tree view with "PBX Configuration" selected, and "7.SIP Trunk Property" highlighted. The main content area has three tabs: "Common", "SIP Carrier - 1", and "SIP Carrier - 2". The "SIP Carrier - 1" tab is active. The "SIP Registration Status" is set to "Not yet". The "Provider Name" field is empty. The "SIP Server Name" field is empty. The "SIP Server IP Address" field is set to "0 . 0 . 0 . 0". The "SIP Server Port Number" field is set to "5060" with a range "(1 - 65535)". The "SIP Service Domain" field is empty with a range "[0-9 a-z A-Z - .]". The "Subscriber Number" field is empty with a range "[0-9 # *]". The "Account" section has three fields: "User Name (64 characters)", "Authentication ID (64 characters)", and "Authentication Password (32 characters)", all of which are empty. The "Register" section has a "Register Ability" label and two radio buttons: "Enable" (selected) and "Disable".

HTS Web Maintenance Console
000.00285

PBX Configuration

- 1. System
- 2. Extension
- 3. Trunk
 - 1. Port
 - 2. DIL
 - 3. DDI
 - 4. Caller ID Modify & Block
 - 5. DISA
 - 6. Analogue CO Property
 - 7. SIP Trunk Property
- 4. TRS/ARS
- 5. System Speed Dialling
- 6. Conference
- 7. Voice Mail

Network Configuration

Maintenance

SIP Trunk Property

PBX Configuration > 3.Trunk > 7.SIP Trunk Property

Common **SIP Carrier - 1** SIP Carrier - 2

SIP Registration Status: Not yet

Provider Name (20 characters):

SIP Server Name (100 characters):

SIP Server IP Address: 0 . 0 . 0 . 0

SIP Server Port Number: 5060 (1 - 65535)

SIP Service Domain (100 characters): [0-9 a-z A-Z - .]

Subscriber Number: [0-9 # *]

Account

User Name (64 characters):

Authentication ID (64 characters):

Authentication Password (32 characters):

Register

Register Ability: Enable Disable

16. Assign Voice Codec.

Ask correct CODEC to your SIP carrier.

If it is G.729, assign G729 for 1st priority and None for 2nd and 3rd priority.

PBX Configuration > 3.Trunk > 7.SIP Trunk Property

Voice

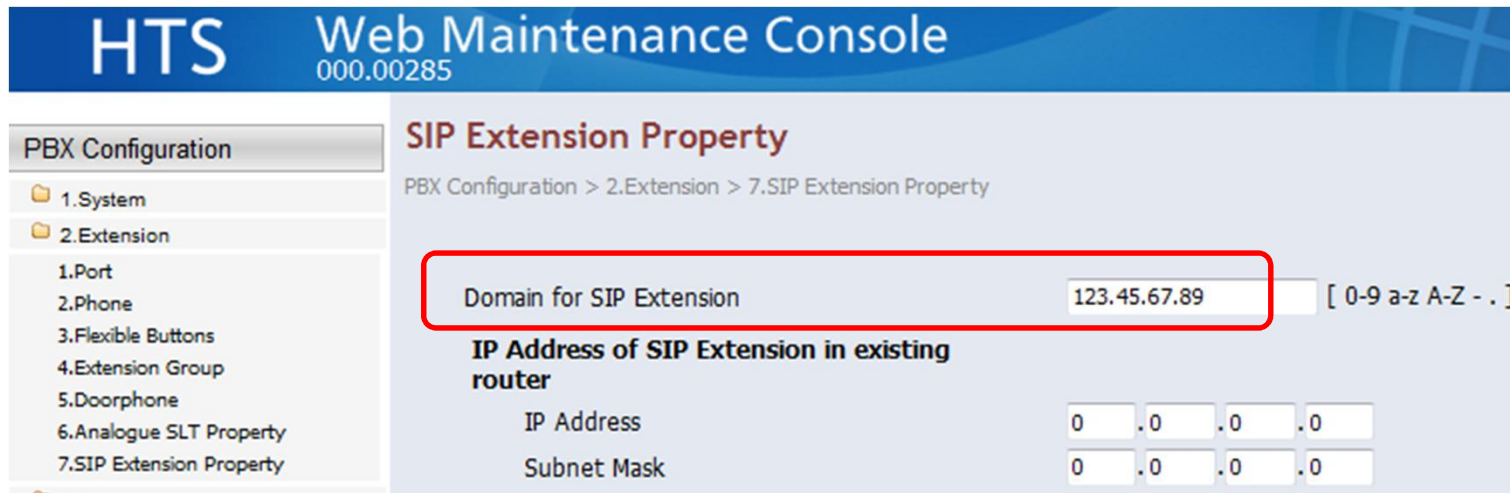
- | | |
|-----------------------|--|
| IP Codec Priority 1st | <input checked="" type="radio"/> G.711A
<input type="radio"/> G.711Mu
<input type="radio"/> G.729A |
| IP Codec Priority 2nd | <input type="radio"/> G.711A
<input checked="" type="radio"/> G.711Mu
<input type="radio"/> G.729A
<input type="radio"/> None |
| IP Codec Priority 3rd | <input type="radio"/> G.711A
<input type="radio"/> G.711Mu
<input type="radio"/> G.729A
<input checked="" type="radio"/> None |

17. Assign SIP Domain Name.

SIP domain name is required for call using WAN.

123.45.67.89 is example.

Some SIP phone does not support character (a-z A-Z) for SIP domain name.



The screenshot shows the HTS Web Maintenance Console interface. The header includes the HTS logo and the text 'Web Maintenance Console 000.00285'. A left-hand navigation menu is titled 'PBX Configuration' and lists several options: 1.System, 2.Extension, 1.Port, 2.Phone, 3.Flexible Buttons, 4.Extension Group, 5.Doorphone, 6.Analogue SLT Property, and 7.SIP Extension Property. The main content area is titled 'SIP Extension Property' and shows a breadcrumb trail: 'PBX Configuration > 2.Extension > 7.SIP Extension Property'. A red box highlights the 'Domain for SIP Extension' field, which contains the IP address '123.45.67.89' and a help icon with the text '[0-9 a-z A-Z - .]'. Below this, there is a section titled 'IP Address of SIP Extension in existing router' with two rows of input fields: 'IP Address' and 'Subnet Mask', each with four individual boxes containing the number '0'.

18. Assign DDI.

HTS Web Maintenance Console
000.00285

PBX Configuration

- 1. System
- 2. Extension
- 3. Trunk
 - 1. Port
 - 2. DIL
 - 3. DDI
 - 4. Caller ID Modify & Block
 - 5. DISA
 - 6. Analogue CO Property
 - 7. SIP Trunk Property
- 4. TRS/ARS
- 5. System Speed Dialling
- 6. Conference
- 7. Voice Mail

Network Configuration

Maintenance

DDI
PBX Configuration > 3.Trunk > 3.DDI

Dialling Plan

SIP Carrier	DDI	Remove Digit	Additional Dial [0-9 # *]
1	Enable ▾	0 ▾	<input type="text"/>
2	Enable ▾	0 ▾	<input type="text"/>

DDI Table

No.	DDI Number [0-9 # *]	Name	Destination Day	Destination Lunch	Destination Night
1	<input type="text" value="55553301"/>	<input type="text"/>	101/ ▾	111/ ▾	501/DISA ▾
2	<input type="text" value="55553302"/>	<input type="text"/>	102/ ▾	602/Group ▾	602/Group ▾
3	<input type="text" value="55553399"/>	<input type="text"/>	691/Meet Me ▾	691/Meet Me ▾	691/Meet Me ▾
4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

When received DDI number after modification by “Remove” and “Add” cannot be found in DDI table, but it is same as extension number, destination becomes the extension. If it is not extension number also, DIL is applied.

19. Assign CLIP.

HTS Web Maintenance Console
000.00285

PBX Configuration

- 1. System
- 2. Extension
- 1. Port
- 2. Phone
- 3. Flexible Buttons
- 4. Extension Group

Port
PBX Configuration > 2.Extension > 1.Port

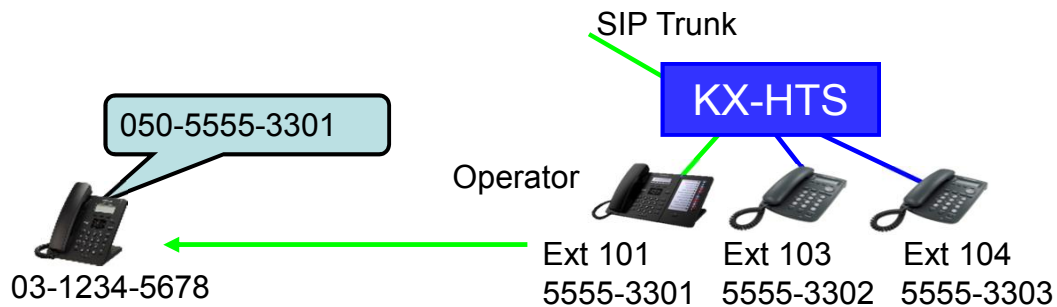
Extension Number: [0-9]

Extension Name:

CLIP

SIP Carrier - 1: [0-9]

SIP Carrier - 2: [0-9]



Chapter 2

Test after SIP Programming

21. Confirm CO Access Number.

HTS Web Maintenance Console
000.00285

PBX Configuration

- 1. System
 - 1. Date & Time
 - 2. MOH
 - 3. Week Table
 - 4. Numbering Plan
 - 5. Timers
 - 6. System Options
 - 7. SMDR
- 2. Extension
- 3. Trunk
- 4. TRS/ARS
- 5. System Speed Dialling
- 6. Conference
- 7. Voice Mail

Network Configuration

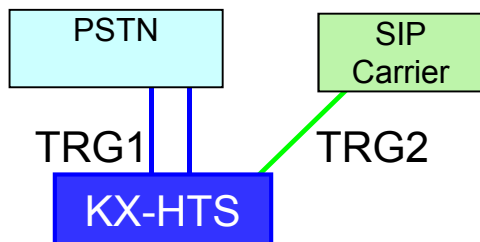
Maintenance

Numbering Plan

PBX Configuration > 1. System > 4. Numbering Plan

Main Features Quick Dial Dialing Plan

No.	Feature	Dial (1 digit) [0-9]	Additional Dial
5	Extension Numbering Scheme 5	5	XX
6	Extension Numbering Scheme 6	6	XX
7	Call Park	7	XX
8	Trunk Line / Trunk Group	8	0X or #X
9	Idle Line Access (Local Access) - 1	9	
10	Idle Line Access (Local Access) - 2	0	
11	Feature		



Dial 0 or 9 for any trunk + Phone number.
Dial 8#1 for TRG1 + Phone number.
Dial 8#2 for TRG2 + Phone number.

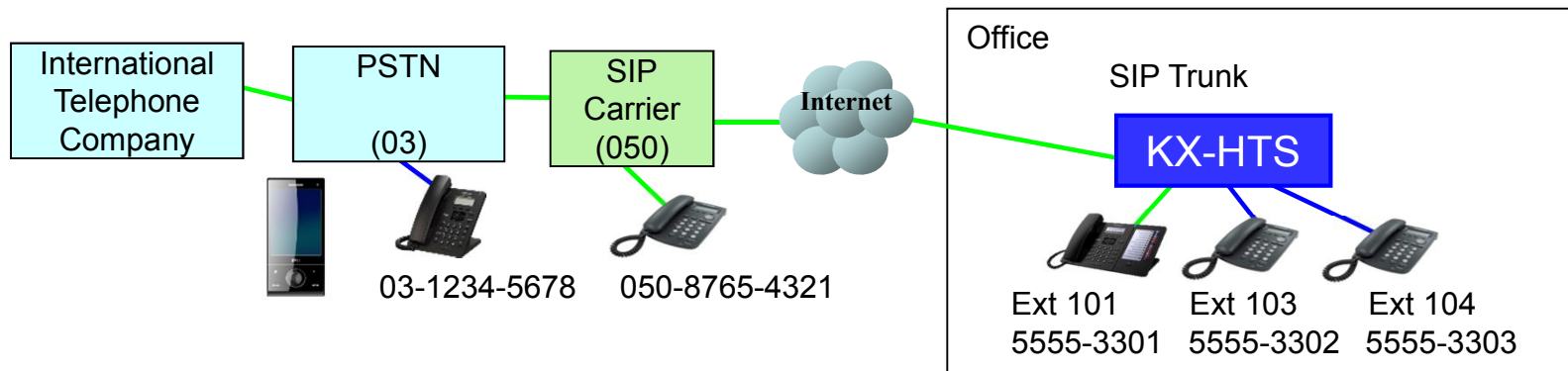
Phone number is 03-1234-5678 for example.

22. Make and Receive a call actually.

Outgoing call : CLIP as caller ID has to be sent to called party correctly.

Incoming call : Call has to be distributed to DDI destination with caller ID correctly.

Talking : Voice quality has to be good. DTMF can be sent.



Call	Phone	Check
Call from	Phone in SIP Carrier	
Call to	Phone in SIP Carrier	
Call from	Phone in PSTN (Analog)	
Call to	Phone in PSTN (Analog)	

Call	Phone	Check
Call from	Cellular Phone	
Call to	Cellular Phone	
Call from	International (if customer needs)	
Call to		

Chapter 3

ARS Programming

30. ARS : Automatic Route Selection

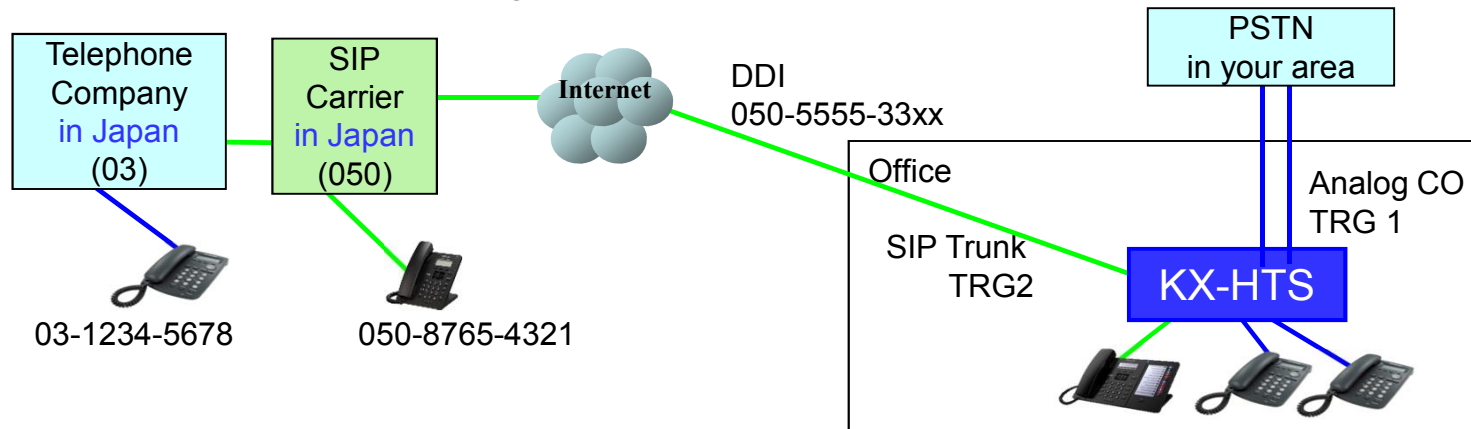
SIP trunk can be selected automatically for programmed phone number. Dialed number can be modified automatically.

9/0-011-81(Japan) selects SIP : TRG2. Remove 01181 and add 0.

Dialed number by user : 9/0-011-81-3-1234-5678

Dialed number by KX-HTS to SIP : 03-1234-5678

9/0-Other dial selects Analog CO : TRG1.



31. Assign Leading Digits & Change TRS.

HTS Web Maintenance Console
000.00314

PBX Configuration

- 1. System
- 2. Extension
- 3. Trunk
- 4. TRS/ARS
 - 1. Leading Digits
 - 2. ARS Carrier
 - 3. Account Code
 - 4. Emergency Dial
 - 5. Options
- 5. System Speed Dialling
- 6. Conference
- 7. Voice Mail

Leading Digits
PBX Configuration > 4 TRS/ARS > 1. Leading Digits

No.	Leading Digits [0-9 # * N X Z]	TRS Level (COS) 1	TRS Level (COS) 2
1	011	Allow	Deny
2	01181	Allow	Allow
3	0X	Allow	Allow
4		Allow	Deny

Default of TRS level is 2 for all extensions.

32. Assign ARS Carrier.

No.	Leading Digits [0-9 # * N X Z]	TRS Level (COS) 1	TRS Level (COS) 2	ARS Carrier Priority-1	ARS Carrier Priority-2	ARS Carrier Priority-3
1	011	Allow ▼	Deny ▼	1: ▼	None ▼	None ▼
2	01181	Allow ▼	Allow ▼	2: ▼	1: ▼	None ▼
3	0X	Allow ▼	Allow ▼	1: ▼	None ▼	None ▼
4		Allow ▼	Deny ▼	None ▼	None ▼	None ▼

If carrier name is assigned as next page, it is displayed for selection.

ARS Carrier Priority-1	ARS Carrier Priority-2	ARS Carrier Priority-3
1:Local PSTN ▼	None ▼	None ▼
2:Japan SIP ▼	1:Local PSTN ▼	None ▼
1:Local PSTN ▼	None ▼	None ▼

33. Assign ARS Carrier.

HTS Web Maintenance Console
000.00314

PBX Configuration

- 1. System
- 2. Extension
- 3. Trunk
- 4. TRS/ARS
 - 1. Leading Digits
 - 2. ARS Carrier
 - 3. Account Code
 - 4. Emergency Dial
 - 5. Options
- 5. System Speed Dialling
- 6. Conference
- 7. Voice Mail

Network Configuration

Maintenance

ARS Carrier

PBX Configuration > 4 TRS/ARS > 2. ARS Carrier

No.	Carrier Name	Dial Modification Remove(digits)	Dial Modification Add [0-9 # *]	Trunk Group
1	Local PSTN	0 ▼		TRG1 ▼
2	Japan SIP	5 ▼	0	TRG2 ▼
3		0 ▼		TRG1 ▼
4		0 ▼		TRG1 ▼

Programming is completed. Try making call by ARS.

Thank you !

<https://namlong.vn> Hotline: 092 888 2345

Revision

Date	No.	Change
July 28, 2016	All	First official release
August 8, 2016	Chapter 3	ARS was added.